

**Mid Coast Hospital
Cumberland County
Brunswick, Maine
A-763-71-C-R**

**) Departmental
) Findings of Fact and Order
) Air Emission License**

After review of the air emissions license renewal application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Mid Coast Hospital of Brunswick, Maine has applied to renew their Air Emission License permitting the operation of emission sources associated with their health care facility.

B. Emission Equipment

Mid Coast Hospital is authorized to operate the following equipment:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Maximum Firing Rate</u>	<u>Stack #</u>
Boiler #1	10.46	#2 oil, 0.5%	74.7 gal/hr	1
		Natural Gas	10155 scf/hr	
Boiler #2	10.46	#2 oil, 0.5%	74.7 gal/hr	1
		Natural Gas	10155 scf/hr	
Boiler #3	10.46	#2 oil, 0.5%	74.7 gal/hr	1
		Natural Gas	10155 scf/hr	
Unit #4 (air make-up)	2.5	Propane	26.6 gal/hr	2
		Natural Gas	2427.2 scf/hr	
Boiler #4	1.0	Propane	10.6 gal/hr	3
		Natural Gas	970.9 scf/hr	
Boiler #5	1.0	Propane	10.6 gal/hr	3
		Natural Gas	970.9 scf/hr	

Electrical Generation Equipment

<u>Equipment</u>	<u>Power Output (kW)</u>	<u>Fuel Type, % Sulfur</u>	<u>Maximum Firing Rate</u>	<u>Stack #</u>
Emergency Generator #1	1250	Diesel fuel, 0.05%	82.5 (gal/hr)	4

C. Application Classification

The application for Mid Coast Hospital does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of current licensed emission units only. This source is determined to be a minor source and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boilers #1, #2 and #3

Mid Coast Hospital operates Boilers #1, #2 and #3 primarily for facility hot water and heating needs. Boilers #1, #2 and #3 have maximum heat input capacities of 10.46 MMBtu/hr each firing #2 fuel oil. All three boilers were manufactured and installed in 2000 and were subject to BACT as well as EPA New Source Performance Standards (NSPS) Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units applicable to boilers with a heat input of greater than 10 MMBtu/hr and manufactured after June 9, 1989). The applicable requirements are included in the following:

1. Standard for sulfur dioxide: 40 CFR Part 60, Subpart Dc, section 60.42c,

2. Compliance and performance test methods and procedures for sulfur dioxide: 40 CFR Part 60, Subpart Dc, section 60.44c,
3. Reporting and record keeping requirements: 40 CFR Part 60, Subpart Dc, section 60.48c.

As per NSPS, Subpart Dc, Mid Coast Hospital shall be restricted to firing #2 fuel oil with a sulfur content of no greater than 0.5% sulfur by weight, based on a 30 day rolling average, in the three boilers. Compliance with this restriction shall be based on supplier certification containing the following information:

- a. name of the supplier; and
- b. statement from the supplier that the oil complies with the specifications under the definition of distillate oil.

Mid Coast Hospital's current license restricts Boilers #1, #2 and #3 to firing no greater than 1,000,000 gallons of #2 fuel oil in the three boilers combined annually. Boilers #1, #2 and #3 are also currently licensed to fire natural gas with no restriction given in the current license. In an effort to allow the facility the flexibility to make good economic choices as to which of the two licensed fuels to use (#2 fuel oil or natural gas) and at the same time maintain the current licensed allowed emissions from the three boilers, heat input into the three boilers will be restricted. In the future, Mid Coast Hospital shall be restricted to an annual heat input in Boilers #1, #2 and #3 combined of 140,000 MMBtu/yr based on a twelve-month rolling total. This is the equivalent heat input of 1,000,000 gallons of #2 fuel oil. Heat input shall be calculated using the following conversion factors:

1. 140,000 btu per gallon of #2 fuel oil,
2. 1030 btu per scf of natural gas,

In order to demonstrate compliance with the annual heat input restriction and the sulfur content restriction, Mid Coast Hospital shall maintain a fuel use log, which shall include the fuel oil consumption, heat input calculations and the NSPS required supplier certification.

A summary of the BACT/BPT analysis for boilers #1 (10.46 MMBtu/hr), #2 (10.46 MMBtu/hr) and #3 (10.46 MMBtu/hr) is as follows:

1. NSPS, Subpart Dc requires the use of fuel oil with a sulfur content of no greater than 0.5% by weight.
2. The PM/PM₁₀ limits are derived from Chapter 103.
3. NO_x, CO and VOC emission limits are based upon AP-42 data dated 9/98 for the combustion of #2 fuel oil and 10/96 for the combustion of natural gas.

4. Visible emissions from Stack #1 are subject to Chapter 101 of the Air Regulations and shall be restricted to the following:
 - a. Visible emissions from stack #1, during periods when only one of the three boilers is operational and is firing natural gas, shall not exceed 10% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.
 - b. Visible emissions from stack #1, during periods when only one of the three boilers is operational and is firing #2 fuel oil, shall not exceed 20% opacity on a 6-minute block average except, for no more than two 6-minute block averages in a 3-hour period.
 - c. Visible emissions from stack #1, during periods when more than one of the three boilers is operational and firing either fuel, shall not exceed 30% opacity on a 6-minute block average except, for no more than three 6-minute block averages in a 3-hour period.

Annual emission restriction calculations for Boilers #1, #2 and #3 are based on the worst case scenario of firing only #2 fuel oil.

C. Unit #4 (make-up air unit)

Mid Coast Hospital utilizes a small hot air make-up unit rated at 2.5 MMBtu/hr firing either propane or natural gas. Unit #4 has a maximum heat input capacity below the NSPS applicability threshold and is therefore not subject to EPA's NSPS Subpart Dc

A summary of the BPT analysis for Unit #4 is as follows:

1. Unit #4 is subject to Chapter 103 (Fuel Burning Equipment Particulate Emissions Standards), however BPT for PM/PM₁₀ in this license is more restrictive. BPT for PM/PM₁₀ for Unit #4 is 0.05 lb/MMBtu.
2. SO₂, NO_x, CO and VOC emission limits are based upon AP-42 data dated 9/98 for propane combustion 7/98 for natural gas combustion.
3. Visible emissions from Stack #2 are subject to Chapter 101 of the Air Regulations:

Visible emissions from stack #2 shall not exceed 10% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.

Unit #4 annual emission restriction calculations are based on the worst case scenario of either propane or natural gas for each criteria pollutant.

D. Boilers #4 and #5

Mid Coast Hospital makes use of Boilers #4 and #5 primarily for facility hot water and heating needs for the Medical Office Building. Boilers #4 and #5 have maximum design heat input capacities of 1.0 MMBtu/hr each firing either natural gas or propane. Both units have maximum heat input capacities below the NSPS applicability threshold and are therefore not subject to EPA's NSPS Subpart Dc

A summary of the BPT analysis for Boiler #4 and #5 are as follows:

1. Boilers #4 and #5 are subject to Chapter 103 (Fuel Burning Equipment Particulate Emissions Standards), however BPT for PM/PM₁₀ in this license is more restrictive. BPT for PM/PM₁₀ for Unit #4 is 0.05 lb/MMBtu.
2. SO₂, NO_x, CO and VOC emission limits are based upon AP-42 data dated 9/98 for propane combustion 7/98 for natural gas combustion.
3. Visible emissions from Stack #3 are subject to Chapter 101 of the Air Regulations:

Visible emissions from stack #3 shall not exceed 10% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.

Annual emission restriction calculations for Boilers #4 and #5 are based on the worst case scenario of either propane or natural gas for each criteria pollutant.

E. Emergency Diesel #1

Mid Coast Hospital utilizes a Caterpillar 3512 TA generator set, designated Emergency Diesel #1, to provide power to vital electrical systems at Mid Coast Hospital during periods of emergency. This unit shall be restricted to firing of a low sulfur diesel fuel with a sulfur content of no greater than 0.05% sulfur by weight.

As previously licensed, Mid Coast Hospital is limited to operating the emergency diesel unit no greater than 300 hours per year based on a twelve-month rolling total. In addition, the emergency diesel generator will be operated only when normal testing procedures, as recommended by the manufacturer, are being performed or in case of an emergency as defined in Chapter 100 of the Department Regulations. In order to demonstrate compliance with the hours of operation restrictions, Mid Coast Hospital shall install, maintain and operate an hour meter on the generator unit within 6 months of the signing of this license. Mid Coast Hospital shall maintain a log of Emergency Generator #1 operations with entries of the dates, times, hour meter reading and reason of operation for the generator shall be kept.

The following is the definition of “Emergency” for MEDEP Chapter 115 purposes as per MEDEP Chapter 100:

“... any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology based emission limitation under the license, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.”

By definition, a diesel used for load shedding purposes (also known as a “Dispatchable Load Generators”) is not considered an “Emergency Generator”.

A summary of the BPT analysis for Emergency Diesel Generator #1 is as follows:

1. The PM/PM₁₀ limits are derived from Chapter 103.
2. SO₂, NO_x, CO and VOC emission limits are based upon AP-42 data dated 10/96 for diesel engines of greater than 600 HP.
3. Visible emissions from Stack #4 are subject to Chapter 101 of the Air Regulations:

Visible emissions from stack #4 shall not exceed 20% opacity on a 6-minute block average except, for no more than two 6-minute block averages in a 3-hour period.

F. Annual Emission Restrictions

Mid Coast Hospital shall be assessed fees based on the following annual emissions, based on a twelve-month rolling total:

Pollutant	Tons/Year
PM	6.6
PM ₁₀	6.6
SO ₂	35.9
NO _x	9.4
CO	5.2
VOC	1.0

III.AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Based on the above total facility emissions, Mid Coast Hospital is below the emissions level required for modeling and monitoring.

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**Departmental
Findings of Fact and Order
Air Emission License**

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-763-71-C-R subject to the following conditions:

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (Title 38 MRSA §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115.
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both.
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request.
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353.
- (6) The license does not convey any property rights of any sort, or any exclusive privilege.

- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions.
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request.
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license.
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
 - (i) perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - a. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - b. pursuant to any other requirement of this license to perform stack testing.
 - (ii) install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - (iii) submit a written report to the Department within thirty (30) days from date of test completion.

- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- (i) within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - (ii) the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
 - (iii) the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement.
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation.
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.

SPECIFIC CONDITIONS

(16) Boilers #1, #2 and #3

- A. Mid Coast Hospital shall be licensed to fire either #2 fuel oil or natural gas in Boilers #1, #2 and #3.
- B. Mid Coast Hospital shall be restricted to an annual heat input in Boilers #1, #2 and #3 combined of 140,000 MMBtu/yr based on a twelve-month rolling total.
- C. New Source Performance Standards (NSPS)
1. As per 40 CFR Part 60, Subpart Dc, section 60.42c: Standard for sulfur dioxide, Mid Coast Hospital shall be restricted to firing #2 fuel oil with a sulfur content of no greater than 0.5% sulfur by weight, based on a 30 day rolling average, in the three boilers. Compliance with this restriction shall be based on supplier certification containing the following information:
 - a. name of the supplier; and
 - b. statement from the supplier that the oil complies with the specifications under the definition of distillate oil.
 2. Mid Coast Hospital shall comply with the requirements of 40 CFR Part 60, Subpart Dc, section 60.44c: Compliance and performance test methods and procedures for sulfur dioxide,
 3. Mid Coast Hospital shall comply with the requirements of 40 CFR Part 60, Subpart Dc, section 60.48c: Reporting and record keeping requirements.
- D. Mid Coast Hospital shall maintain a fuel use log for Boilers #1, #2 and #3, which shall include the fuel oil consumption, heat input calculations and the NSPS required supplier certification. The fuel use log shall be maintained on a monthly and a twelve-month rolling total basis
- E. Emissions from Boilers #1, #2 and #3 each shall not exceed the following:

Fuel Type		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
#2 Fuel Oil	lb/MMBtu	0.08	-	-	-	-	-
	lb/hr	0.8	0.8	5.3	1.5	0.4	0.04
Natural Gas	lb/MMBtu	0.05	-	-	-	-	-
	lb/hr	0.5	0.5	0.006	1.0	0.8	0.06

F. Visible emissions.

- a. Visible emissions from stack #1, during periods when only one of the three boilers is operational and is firing natural gas, shall not exceed 10% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.
- b. Visible emissions from stack #1, during periods when only one of the three boilers is operational and is firing #2 fuel oil, shall not exceed 20% opacity on a 6-minute block average except, for no more than two 6-minute block averages in a 3-hour period.
- c. Visible emissions from stack #1, during periods when more than one of the three boilers is operational and firing either fuel, shall not exceed 30% opacity on a 6-minute block average except, for no more than three 6-minute block averages in a 3-hour period.

(17) Unit #4 (make-up air unit)

- A. Mid Coast Hospital shall be licensed to fire either natural gas or propane in Unit #4 (make-up air unit).
- B. Emissions from Unit #4 shall not exceed the following:

Fuel Type		PM	PM₁₀	SO₂	NO_x	CO	VOC
Natural Gas	lb/hr	0.1	0.1	0.002	0.2	0.2	0.01
Propane	lb/hr	0.1	0.1	0.04	0.4	0.05	0.01

- C. Visible emissions from stack #2 shall not exceed 10% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.

(18) Boilers #4 and #5

- A. Mid Coast Hospital shall be licensed to fire either natural gas or propane in Boilers #4 and #5.
- B. Emissions from Boilers #4 and #5 each shall not exceed the following:

Fuel Type		PM	PM₁₀	SO₂	NO_x	CO	VOC
Natural Gas	lb/hr	0.05	0.05	0.001	0.1	0.08	0.01
Propane	lb/hr	0.05	0.05	0.02	0.2	0.02	0.01

- C. Visible emissions from stack #3 shall not exceed 10% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.
- (19) Emergency Generator #1
- A. Mid Coast Hospital shall fire only diesel fuel oil with a maximum sulfur content of 0.05% by weight in Emergency Generator #1. Compliance shall be based on fuel receipts from the supplier showing the quantity of fuel delivered and percent sulfur of the fuel.
- B. The Emergency Diesel Generator shall be limited to 300 hours per year of operation, based on a 12 month rolling total. An hour meter shall be installed, maintained and operated on Emergency Generator #1.
- C. Emergency Generator #1 shall be operated only when normal testing procedures, as recommended by the manufacturer, are being performed or in case of an emergency as defined in Chapter 100 of the Department Regulations.
- D. A log documenting the dates, times, meter readings and reason of operation for the generator shall be kept. The log shall include receipts from the fuel oil supplier indicating fuel oil sulfur content.
- E. Emissions from the emergency diesel generator shall not exceed the following:
- | Fuel Type | | PM | PM ₁₀ | SO ₂ | NO _x | CO | VOC |
|------------------------|----------|------|------------------|-----------------|-----------------|------|-----|
| Emergency Generator #1 | lb/MMBtu | 0.12 | - | - | - | - | - |
| | lb/hr | 1.4 | 1.4 | 0.6 | 38.2 | 10.1 | 4.2 |
- F. Visible emissions from Stack #4 shall not exceed 20% opacity on a 6-minute block average except, for no more than two 6-minute block averages in a 3-hour period.
- (20) Mid Coast Hospital shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (Title 38 MRSA §605-C).
- (21) Mid Coast Hospital shall pay the annual air emission license fee within 30 days of May 31 of each year. Pursuant to 38 MRSA 353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for the revocation of the license under 38 MRSA 341-D, Subsection 3.

Mid Coast Hospital
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Departmental
Findings of Fact and Order
Air Emission License

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2004.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

The term of this Order shall be for five (5) years from the signature above.

Date of initial receipt of application: **January 23, 2004**

Date of application acceptance: **January 27, 2004**

Date filed with the Board of Environmental Protection: _____

This Order prepared by, Peter G. Carleton, Bureau of Air Quality